THE AMES Astrogram
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AMES RESEARCH CENTER, MOFFETT FIELD
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Ames' laptop computer tool helps station fly smoothly

Technology used in laptop computers is now saving time and money by helping astronauts troubleshoot International Space Station subsystems during construction

Rick Alena, a computer engineer at Ames, and Dan Duncavage of NASA's Johnson Space Center (JSC), Houston, engineered the computer diagnostic tool. It includes a computer card and software that can monitor status and command messages sent between onboard control computers and major space station subsystems, including solar arrays, docking ports and gyroscopes.

"For producing our on-board spacecraft troubleshooting tool, we found a suitable commercial product, flight qualified the hardware and software and then integrated the diagnostic system with the station support computers, which are modified laptops," said Alena. "We now are using commercial computer systems to support mission and payload operations in space flight because they have the performance required and run a large range of software," he continued.

"The Databus Analysis Tool (DAT) enables engineers on the ground to analyze data during troubleshooting sessions. The tool allows onboard monitoring of the station's nervous system, a computer control network that ties the avionics components together," he explained. Avionics are critical aviation electronics systems that control the station.

Engineers designed the tool to help solve minor problems during assembly of the space station modules. Alena explained that engineers on the ground can resolve most assembly problems using data radioed to them from station systems, but some problems require more data. "Our idea was to acquire data messages directly onboard and to provide this extra data to engineers on the ground to help analyze how station parts were interacting," Alena said.

Although engineers designed the computer tool to be a passive monitor, its first use was to issue commands for checkout of the station's gyroscope systems during the STS-92 mission in October 2000. The gyroscopes are flywheels that stabilize the station's attitude without use of propellant fuel. The attitude of a spacecraft is its tilt compared to the surface of another body in space, such as the Earth. The space station also has small jets that shoot propellant into space to slowly rotate the craft for fine attitude adjustments.

The gyroscopes spin like heavy toy tops to maintain the station's proper orientation relative to Earth, explained Alena. "Otherwise, costly propellant must be used to maintain the station's proper attitude with the control jets. The cost of stabilizing the station using propellant rather than the gyros could run into millions of dollars," he stated.

"After tests in August 2000, engineers decided to use DAT to control heaters that warm the gyroscopes and to test the spin motors. Between the STS-92 shuttle mission that carried the gyroscopes to the station, and the STS-98 mission in February 2001 that delivered the U.S. laboratory module and control computers, engineers needed to check the gyroscopes' operation," Alena said.

Astronauts Bill McArthur and Leroy Chiao tested gyroscopic system operation during STS-92. The astronauts used the computer tool to activate and spin the gyroscopes on the Z1 truss to test controls and sensors. McArthur and Chiao also used DAT to test gyroscope system power, heaters and spin motors. "All four gyroscopes checked out okay," said Alena. "The detailed procedures for checking the gyroscopes were developed by Boeing engineers, in concert with the DAT team," he added.

Ames and JSC partners did the initial tests of DAT in space about four years ago. "The amount of preparation and work to fly an electronic system is quite time-consuming," Alena explained. "DAT has been flown on most station assembly missions since 1998. There are two DAT flight sets, and occasionally we bring one down and test the flight hardware at JSC," he said.

Duncavage and Alena hand-carried the DAT through all flight-qualification phases. The two men minimized the cost in this way and, just as importantly, the DAT was ready to fly early during space station construction, according to Alena.

photo by Richard Alena

Astronaut Bill Shepherd, first commander of the Internatinal Space Station (ISS), uses a DAT laptop computer to monitor the station's status.

BY JOHN BLUCK

Center Briefs

Greater solar activity may bring U.S. more gray days

NASA-funded Earth science researchers have discovered that during periods of increased solar activity much of the United States becomes cloudier. This may occur because the jet stream in the troposphere moves northward, causing changes to regional climate patterns.

The new study supports earlier findings by suggesting there is a relationship between increased cloud cover over the United States and the solar maximum, the most intense stage of activity on the sun.

Chandra detects halo of hot gas around Milky Way-like galaxy

The first unambiguous evidence for a giant halo of hot gas around a nearby, spiral galaxy much like our own Milky Way was found by astronomers using NASA's Chandra X-ray observatory. This discovery may lead to a better understanding of our own galaxy, as well as of the structure and evolution of galaxies in general.

A team of astronomers, led by Professor Daniel Wang of the University of Massachusetts, Amherst, observed NGC 4631, a spiral galaxy approximately 25 million light years from Earth with both Chandra and NASA's Hubble Space Telescope.

Stellar apocalypse yields evidence of water-bearing worlds

As an alien sun blazes through its death throes, it is apparently vaporizing a surrounding swarm of comets, releasing a huge cloud of water vapor. The discovery, reported in an article published in July in the journal Nature, is the result of observations with the Submillimeter Wave Astronomy Satellite (SWAS), a small radio observatory NASA launched into space in December 1998.

The new SWAS observations provide the first evidence that extra-solar planetary systems contain water, a molecule that is an essential ingredient for known forms of life.

NASA rejoins Japan in X-Ray Observatory project

The United States and Japan will team up to rebuild and launch a powerful observatory for measuring high-energy phenomena in the universe.

The Astro-E2 observatory will replace the original Astro-E satellite, which was lost during launch in February 2000. The Japanese government recently approved the Astro-E2 mission and has invited NASA to participate.

What is the 'Spare the Air' program?

Spare the Air, going into its ninth year, is a voluntary air pollution reduction program sponsored by the Bay Area Air Quality Management District. On days when ozone (smog) levels are expected to violate state and federal health standards, residents are asked to refrain from activities that cause air pollution. If everyone makes clean air choices, the air will be healthier to breathe.

What creates smog? The number one source of smog in the Bay Area is the automobile. More than 6.5 million people live in the Bay Area, driving 5.1 million cars 126 million miles a day. That creates over 400 tons of air pollution each day! Other sources of air pollution include consumer spray products like hairspray and household cleaners (45 tons per day), gasoline powered lawn equipment (4 tons per day), recreational boats (17 tons), oil-based paints (1.5 tons), and charcoal lighter fluid (0.6 tons).

How does air pollution affect people? High ozone levels contribute to respiratory problems, such as asthma, shortness of breath, pain during deep breaths (especially when exercising outdoors), bronchitis, coughing and wheezing. The populations most susceptible to ozone's harmful effects are children, whose lungs are still developing, seniors and people with pre-existing respiratory problems.

The Air District will notify print media, television and radio stations, so that they can pass the word on to the general public. The Air District will also post a notice on the Spare the Air website, located at: www.sparetheair.org and at its toll-free number, 1(800) HELP AIR.

Our cumulative efforts can go a long way toward improving air quality on smoggy days. Here is what you can do to 'spare the air' . . .

- Leave your car at home on 'spare the air' days. Try taking public transit, carpooling, telecommuting, walking or biking to work.
- Don't use gas-powered lawn movers and leaf blowers on 'spare the air' days.
- Avoid using consumer products like hairspray and household cleaners.
- Ignite your barbecue with an electric or chimney starter.
- Refuel your car after the sun has gone down and do not top off the tank.

At Ames, you can prevent air pollution in a number of ways . . .

- Bringing your lunch or walking to your lunch destination.
- Using one of the center's bikes or walking between buildings.
- Checking out the Ames' Commute Alternatives Program at: http://code.arc.nasa.gov/jf/acap/

Contact Amanda Dunham at ext. 4-6896 or Norma Layton at ext. 4-1797. These are just some of the things you can do. For more information, you can contact the author at ext. 4-6810 or email her at: jquanz@mail.arc.nasa.gov or visit www.sparetheair.org.

Let's all work for clean air!

BY JULIE QUANZ

Solving the cancer equation

Breast cancer currently plagues more than two million women in the United States — a startling 12.5 percent of women in California alone. Dr. Suhrit K. Dey, professor of mathematics at Eastern Illinois University, is currently collaborating with computer scientists at the NASA Advanced Supercomputing (NAS) Division at Ames. The goal is to create mathematical models that will predict how cancer spreads in the human body and how it may be contained or even cured.

Dey plans to integrate a technique called multi-level parallelism into his three-dimensional modeling code to enhance its computational performance on the NAS division's 512-processor SGI Origin 3800 supercomputer, Chapman. Dey's mathematical models are based, in part, on his theory that there is a direct correlation between stress levels and the development of breast cancer.

Dey is currently computing one-dimensional cancer models using a set of eight mathematical equations. These models include several variables, such as the number of lymphocytes (cells in the human body that attack cancer), number of cancer cells, types of medical treatments, angiogenesis (the development of new blood vessels) and glucose levels in the body.

"I am building these models based on information I'm gathering in scientific journals, which is qualitatively accurate. Once the models are complete, I will input an individual's data to provide us with some quantitative results — this will enable us to predict if that individual will get cancer, or if their body's immune system can revert the process," explains Dey.

"Right now the problem I am solving is on a small scale, but I am getting some qualitatively valued results which help me communicate better with medical doctors," said Dey. After presenting his theory about the correlation between stress and breast cancer, Dey has received a tremendous amount of support from the medical community.

photo by Dominic Hart

Dr. Suhrit K. Dey

"I feel that Dr. Dey's approach is both novel and intriguing, and could lead to important developments in this field. What he offers is an overview approach that will give mathematical weight to many specific factors involved in causing, preventing and treating cancer," said Dr. Steven Oppenheimer, director of the California Sate University at Northridge's Center for Cancer and Developmental Biology.

Dey is currently seeking a grant that will allow him to begin generating three-dimensional cancer growth models. These models will solve more than 16 million mathematical equations used to describe cancer growth. NAS computer scientists Jim Taft and Rupak Biswas are slated to parallelize Dey's cancer-modeling code to run on Chapman, and will also assist him with the integration of the multi-level parallelism (MLP) technique, developed by Taft. Using three-dimensional cancer models enabled by MLP, Dey will be able to predict the rate of breast cancer growth and/or decay in an individual based on their condition — levels of stress, amount of exercise, and food intake, for example.

In order to create a fairly accurate cancer prediction model, all factors or conditions involved — such as the size of the tumor and level of carcinogens in the body — must be considered at the same time. Since MLP is a shared memory technique, meaning all blocks of work have access to the same area of memory on the computer at the same time, it is ideal for the cancer modeling code.

"The kinds of problems that Dr. Dey is doing require very rapid communication between different parts of the calculation in parallel — MLP will be able to do this very efficiently. The fundamental construction of Dey's code structure is very similar to that of NASA's computational fluid dynamics code OVERFLOW-MLP, which contains many small blocks of work that have to communicate rapidly with each other. Because of these fundamental similarities, we expect the code to scale well with MLP," explained Taft.

Although Dey is returning to Eastern Illinois University at the beginning of August after a five-month visit at Ames, he will continue collaborating with Taft and Biswas to carry out his 3-D modeling work on Chapman. Once these models are complete, Dey is planning to collaborate with mathematics professor Glenn Webb at Vanderbilt University to expand on the cancer-prediction models. "Dr. Dey is developing elaborate models of tumor growth, incorporating multiple features of tumor cell and immune cell interactions — the most interesting feature of these models is their exploration of the importance of the immune system in controlling tumor growth," said Webb, who has been working on mathematical modeling of cancer for 30 years.

Although Dey's mathematical models for cancer prediction are qualitatively accurate, they are designed only to accompany clinical studies of breast cancer, not to replace them. "We need a combination of mathematical models, statistical models,

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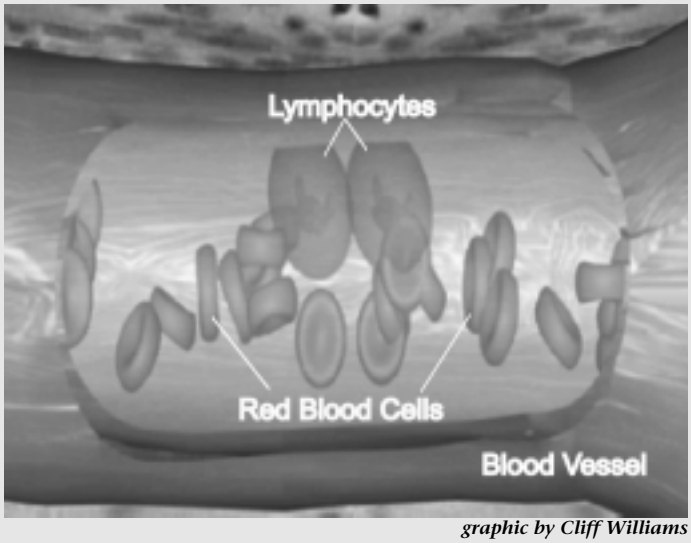


graphic by Cliff Williams

Lymphocytes play a very important role in our immune system by seeking out and destroying cancer cells. When a person is stressed, the number of lymphocytes is significantly reduced because stress hormones, like glucocorticoid, are released into the blood stream. This graphic depicts extremely slow cloning, or reproduction of lymphocytes, in the bloodstream as a result of stress.

African-American youth encouraged to 'reach for the stars'

This summer, 22 young African-American women from low-income Bay Area families are attending U.S. Space Camp California to have fun, expand their horizons and get hands-on experience in science and math.

The Space Camp scholarship program for at-risk minority youth is the brainchild of Sheila Johnson-Heacock of Ames. The program is sponsored by the National Coalition of 100 Black Women, Inc. (NCBW), Silicon Valley chapter. The goal is to inspire and encourage female minority youth to stay in school and explore opportunities available to them in the fields of science and technology.

"We are giving young ladies a window into their future, showing them the great possibilities that are open to them," said Johnson-Heacock, who is in her second year as local president of NCBW. "The U.S. Space Camp program is geared toward teamwork and education; it inspires young people and gives them a better understanding of what is available to them," she said.

The program reaches girls ages 9 to 12 from disadvantaged and traditional homes. They participate in an intensive, five-day training regimen. This includes performing exercises on various simulators, designing space shuttle missions, visiting Ames' vertical motion simulator and conducting scientific experiments. The girls have a chance to not only flip and tumble in an almost-weightless environment and to fly a simulated mission to space, but they also learn details about space exploration and what it takes 'to reach for the stars.' The young women are housed at U.S. Space Camp's 'space habitat' and sample astronaut food.

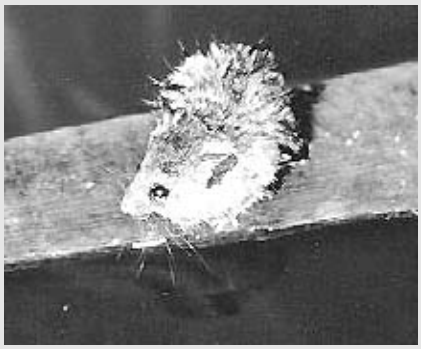
"NASA's goal, as well as that of the NCBW, is to empower women and encourage them to become more involved in the space program," said Johnson-Heacock. "By sending these young girls to Space Camp, we hope to show the younger generation that the sky is no longer the limit," she concluded.

U.S. Space Camp California is a non-profit organization co-located at, but operated independently from, both NASA and Ames Research Center.

BY VICTORIA KUSHNIR

Wildlife in Ames' backyard

At Ames, we are fortunate to have a mosaic of wildlife habitats, including coastal salt marsh and upland grassland, that support a wide variety of California native species. Many of these species are legally protected. In fact, four species listed under the federal Endangered Species Act and twelve listed under a comparable state law



A Salt Marsh Harvest Mouse living in Ames' wetlands.

have been observed on and near the Center, making its lands a rare and ecologically valuable resource. Management of wildlife in these habitats is essential for the continued existence of these unique species, some of which are found only in the Bay Area.

The coastal salt marsh habitat at Ames and adjacent properties supports federally endangered (E) Salt Marsh Harvest Mouse and California Clapper Rail (E). The harvest mouse is unique, in that it is the only mammal capable of drinking salt water. It relies on pickleweed, a succulent marsh plant that stores salt, for both food and shelter. Salt marsh also supports clapper rail, the most endangered animal in California. Numbers plummeted to less than 250 individuals in the mid-1990s, due to increased predation from non-native animals, marsh conversion and degradation and contamination. Intensive wildlife management techniques have allowed the numbers to increase recently.

California Least Terns (E) have been observed roosting and foraging north of our storm water retention pond in the fall, before they migrate for the winter. The levees surrounding the retention pond and the salt flats that are created when the pond dries provide habitat for federally threatened (T) western snowy plovers. For many years, white-tailed kites, a California species of special concern (SC), have been observed nesting in coyote scrub brush that surrounds portions of the pond.

The upland grassland habitat at Ames is comprised of exotic grasses. Western burrowing owls (SC) have completely lost their historic short grass habitat, but have adapted to this new tall grass habitat. Contrary to their name, these owls don't actually burrow. They appropriate ground squirrel burrows for their homes. In the Bay Area, the biggest threat to these unique owls is loss of existing grassland. Short-eared owls (SC) and loggerhead shrikes (SC) are two other birds that live in upland grasslands. Loggerhead shrikes are famous for impaling their prey on barbed wire, for a snack later in the day.

Ames recognizes the importance of its unique habitats and wildlife species and understands its legal and ethical responsibilities to protect them. The author, a wildlife biologist, and Brian Staab, manager of the Ames environmental conservation

California Clapper Rail live in Ames' wetlands.

program, work to help the Center accomplish its many tasks with the least impact possible. Contact the author at ext. 4-3532 or Brian at ext. 4-0701 if you'd like additional information on Ames habitats and wildlife. You can catch a glimpse of some of the creatures residing at Ames on the Code QE web site at: http://q.arc.nasa.gov/qe/cons/index.php, or if you are lucky, maybe on your next walk! You can also find out more about South Bay ecology at the Don Edwards San Francisco Bay Wildlife Refuge located nearby at: http://desfbay.fws.gov/ .

BY CHRIS ALDERETE

New NASA education program inspires undergraduates

Twelve individuals from different backgrounds and colleges and universities move miles away from home to live for 10 weeks at a NASA center and learn to co-exist in a research environment. MTV, you might ask? Survivor? Big Brother? Not exactly! While it is a reality program, it's not quite the kind that's filling your television screen lately.

The NASA Undergraduate Student Research Program (NASA-USRP) is, in fact, an exciting, new educational opportunity developed by the Education Division at NASA Headquarters. Managed by the Virginia Space Grant Consortium, the program has been designed to serve as a bridge between NASA's K-12 and existing graduate education experiences. The selected students, who have resided in the NASA Exchange Lodge since Memorial Day weekend, have been matched with mentors from a variety of disciplines across the center to perform work in support of NASA's mission.

The participants are: Jason Andrews, Massachusetts Institute of Technology (Larry Young, mentor); Maria Berrios, University of Puerto Rico Mayaguez Campus (Dr. Harry Partridge and Ramsey Stevens, mentors); Ian McAninch, Rensselaer Polytechnic Institute (Dr. Harry Partridge and Lance Delzeit, mentors); Lindsey McCall II, University of Alabama (Dr. Gerald Mulenburg/Dan Gundo, mentors); Steve McGuire, the Pennsylvania State University (Maria Bualat, Richard Washington, mentors); Monika Mellem, Tufts University (Robin Morris, mentor); Erin Miller, the University of Texas at Austin (Mark Won, Craig Hange, Doug Wardwell and Dr. Jeffrey Turk, mentors); Kate Pirog, University of Illinois (Brent Beutter and Dr. Lee Stone, mentors); Marlene Sosa Cuevas, Colegio Universitario del Este (Dr. Lee Prufert-Bebout, mentor); Aaron Svoboda, University of Northern Colorado (Dr. Robert Rubin, mentor); Taryn Winkle, Rensselaer Polytechnic Institute (Fritz Moore, mentor); and RuGang Xu, Carnegie Mellon University (Anne Wright and Mike Fair, mentors).

photo by Eric James

NASA Undergraduate Student Research Program participants (NASA-USRP) meet their mentors for the first time and begin a ten-week research experience at Ames. NASA-USRP is a new program developed by the Education Division at NASA Headquarters.

Although currently a pilot program and open only to rising undergraduate juniors and seniors, NASA-USRP already has been given the green light for another year of funding and may expand eligibility to include all undergraduate college students. This year, 120 students out of a nationwide pool of more than 1,000 applicants were chosen to participate. Ames alone received more than 430 applications for only 12 slots. Besides Ames, five NASA centers have been hosting students this summer, with three others preparing for students in the fall.

In addition to their research assignments, the students have toured a variety of facilities on site and heard lectures from some of NASA's finest researchers. By all indications, the new program is a hit!

At Ames, NASA-USRP is a program of the Education Office. For more information, visit the national web site at: http://education.nasa.gov/usrp

By Greg Gibbs

Sixth annual chili cook-off—got a team?

It's time to get serious about dusting off your chili recipe to see if you can turn it into a winner at this year's chili cook-off. The 6th annual Ames chili cook-off will take place during "Stand Down Day" on Sept. 26 as part of the Safety and Quality Week celebration.

From 11:30 a.m. until 1:00 p.m., Durand Road will again be lined with hot chili as well as health, safety and environmental booths. Come stroll among the booths and sample the great chili. Cast a vote for your favorite for the grand prize – the people's choice award!

Better yet, pull together friends and coworkers and create a team, a theme and some memorable chili and take home the trophy yourselves. It will be much more fun that way. The price is right if you act now. The Exchange Council has, once again, agreed to provide $50 for the first 25 teams to sign up. That will make a lot of chili! Enter your team by contacting Christel VanArsdale, ext. 4-1175 or email cvanarsdale@mail.arc.nasa.gov

Who will be this year's coveted people's choice award winner? You can help make a difference with your vote, especially if you encourage your organization to come out and support your team. Come to the 6th annual street fair and chili cook-off, listen to the music, watch live performances, taste chili and have fun.

Solving the cancer equation

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and clinical studies, so we can see breast cancer from every possible angle. I can see the light at the end of the tunnel. The solution is there, but desperately, I need help from others so breast cancer can be contained," said Dey. "If 10 percent of the people take an interest in this and protect themselves, that's a large number of women being saved."

Dey welcomes and appreciates questions and/or suggestions sent to: cfskd@ux1.cts.eiu.edu, or visit his website at: http://www.ux1.eiu.edu/~cfskd/)

By Holly A. Amundson

NASA technology to be featured at Air Expo

NASA's cutting-edge research in information technology, aeronautics and space science will be showcased in a new "technology pavilion" during the Air Show Network's Air Expo at Ames Research Center, Aug. 11-12.

Housed in historic Hangar One, the display will feature a variety of exhibits highlighting new and emerging technologies. NASA Ames' research will be featured in a 10,000-square-foot interactive display within the technology pavilion.

"This event offers NASA an extraordinary opportunity to promote our mission in information technology and aeronautics," said Dr. Henry McDonald, Center Director at Ames. "It will also enable us to develop new strategic partnerships with the private sector. Through these partnerships, industry will benefit from the advanced research capabilities we have at this Center, and we will benefit from their expertise in making our technologies more readily available to the public," he said.

"This activity fits in well with our new NASA Research Park initiative," explained McDonald. "The NASA Research Park will bring together the best of Silicon Valley, and the nation, to work with us to accomplish our mission. A critical element of our mission is to share what we learn with the public; what better way than through an exciting air show and exposition, " McDonald added.

"The Air Expo event will be a tremendous opportunity for NASA to showcase its latest developments in the areas of aeronautics and information technology," said Mountain View Mayor Mario Ambra. "The City of Mountain View looks forward to this exciting event," he added.

"The Moffett Field air shows and expositions have long been exciting opportunities for the public to view both the history and future of aviation," said Sunnyvale Mayor Jack Walker. "NASA Ames is continuing that tradition, as well as offering a chance for the public to glimpse some of NASA's newest efforts in aerospace and information technology," Walker continued.

The Ames information technology display will highlight advances made by applying the latest techniques in digital technology to real-world problems and situations. The Ames aeronautics display will feature research aimed at improving the nation's air traffic management system to increase efficiency and reduce delays while maintaining air travel safety. The science display will showcase the diverse research being conducted at Ames in astrobiology, medical applications and various experiments and hardware for the International Space Station.

Featured in the NASA exhibit will be displays highlighting NASA Research Park and the California Air and Space Center, the space shuttle docking simulator, intelligent flight control, artificial heart assist pump, air traffic management tools, rotorcraft and tiltrotors, robots and the Stratospheric Observatory for Infrared Astronomy (SOFIA).

Among the aerial acts to be featured at the Air Expo will be formation aerobatics by the Smirnoff Ice MiG-17s; Team Oracle stunt pilot Sean D. Tucker; Greg Poe in the Crucial Technology Edge 540; and Steve Appleton in a former RAF Hawker Hunter; a high-speed demonstration by the U.S. Navy's F/A-18 demonstration team flying with a World War II era F8F Bearcat; and sky diving and combat rescue demonstrations by the 129th squadron of the California Air National Guard. Audiences can see more than 30 aircraft on display, including NASA's 747 space shuttle transport, a B-1 Bomber, an F-117 Stealth Fighter, and the C-17 Globemaster transport aircraft.

"We are pleased to be working with NASA, the premier space and technology organization in the world, in the development of this important event," said Jim Breen, president and founder of The Air Show Network, Carpinteria, CA. "As the leader in aerospace and technology, the United States should have a world-class event to showcase its achievements, and we believe the Air Expo at Moffett Field will be such an event. Located in the heart of Silicon Valley, Moffett Field offers the finest combination of location and facilities possible for the development of a world-class event such as this," Breen said.

More than 100,000 people are expected to attend the two-day Air Expo, which will be held from 9 a.m. to 6 p.m. both days. On-site parking is available only with advance purchase of premier seating at: http://www.airshownetwork.com Limited off-site parking is available at the Juniper Networks, and Lockheed facilities on Mathilda Avenue, and free secured bicycle parking will be offered at the Ellis Street entrance. The VTA will also add additional service and link CalTrain with the event at the Mountain View station. For additional information, call (650) 562-3665 or visit the Air Show Network web site.

The Air Show Network is the largest air show producer in North America. The company has supported more than 600 aviation events during the past 14 years, working with all branches of the U.S. military, as well as the Royal Canadian Air Force and the Royal Air Force of the United Kingdom. The Air Show Network is owned by Umbrella Entertainment Group, a privately held company based in Carpinteria, CA. For more information about The Air Show Network, visit: http://www.airshownetwork.com

BY MICHAEL MEWHNNEY

NASA STARS shooting toward Ames

NASA is introducing a new resume-management process and system called NASA STARS - NASA's automated STaffing And Recruiting System. This new process will enable NASA to enhance human resource (HR) capabilities to attract and retain a world-class workforce in the 21st century. NASA STARS uses a commercial, off-the-shelf applicant rating and referral software system called Resumix. This system uses advanced optical character recognition software, imaging technologies and a patented skill extraction system to 'read' resumes. In a very quick procedure, Resumix identifies resumes submitted for a vacancy announcement and searches those resumes for skills to match the position requirements.

How will NASA STARS benefit employees? The entire process is faster and easier for employees. They will be able to access NASA job opportunities and apply on-line through the NASA Jobs web site at: www.nasajobs.nasa.gov. Vacancy announcements will link employees to an online resume builder, a resume guide, and a 'quick apply' form for completion and submission of resumes. Old application forms (SF-171 and OF-612) will be replaced by electronic resumes. Employees will no longer need to address knowledges, skills and abilities (KSAs), as employees' major skills will be captured on one resume. The new automated process will allow employees to apply for vacancy announcements faster, receive automatic notification of receipt of their resume and receive faster, objective consideration for jobs they have applied for. With just one resume, applicants will be able to apply for multiple positions at Ames or at different NASA locations.

How will this benefit hiring managers? Technology will speed up the staffing process so that NASA hiring managers can attract and hire highly-qualified candidates very quickly. Online access to job opportunities and the resume builder will facilitate recruiting on campus and at job fairs. The automated process will expedite the referral of potentially highly-qualified individuals. It will allow selecting officials to quickly access lists and resumes electronically and make an informed and speedy selection. The skills inventory database will assist managers in beginning workforce planning.

Because this is a new process, employee briefings and periodic updates will be provided as part of the implementation plan for NASA STARS. The prospect of preparing a "whole person" resume (focused on key skills and competencies gained over the course of the applicant's career that directly support his/her career aspirations) may be a new idea to Ames employees. Consequently, aids such as resume preparation classes, a user-friendly automated resume builder and resume guide will be provided to help with resume preparation.

As the new system is rolled out at each center, employees will be asked to submit a resume to the "skills inventory." Once their resume is in the database, applicants will simply enter a vacancy number on a quick apply form to apply for a job at Ames or NASA.

NASA STARS is coming soon to every NASA center. Ames will roll out this system in early October 2001. For more information on NASA STARS, visit our NASA Jobs web site at www.nasajobs.nasa.gov and our NASA STARS web site at www.nasastars.nasa.gov. Be sure to watch for further announcements and upcoming training events.

BY JOE MURPHY

Space Camp to support Leukemia and Lymphoma Society

On July 14, 1996 Space Camp California became a reality. The organization is dedicated to inspiring young people to believe in themselves and their dreams. The Space Camp Foundation has been very fortunate to have the support of many former and current astronauts; however, one individual had been unmatched in his efforts. Alan B. Shepard had supported the Space Camp Foundation for many years, but in 1996 he became a part of Space Camp California and all of its efforts. Shepard was very much involved in the opening of Space Camp California. He continued to support us through many of our local marketing and fund-raising efforts. Shepard gave so much of himself to making the U.S. Space Camp Foundation successful, that he became a part of all of us and our mission. Tragically, we lost this very special person in July 1998 to his battle with leukemia. Although we know that it is impossible to "thank" Shepard, we wanted to share the love, admiration and gratefulness that we have all felt for this very special person.

On Sept. 9, a team of both current and former employees of Space Camp California will participate in the Los Angeles Triathlon as a tribute to Alan Shepard. The purpose of our participation is to raise money to support the Leukemia and Lymphoma Society in memory of and honor to Alan B. Shepard. Our team goal and commitment is to raise $25,000 to help fund research toward a cure for leukemia in our lifetimes. A minimum of 75 percent of all donations goes directly toward leukemia research, which is considered to be the window to the treatment and cure of all cancers. All on-site personnel and associates are invited to support us in our fundraising efforts.

We appreciate anything you can do to help this truly worthy cause. Training for this triathlon will be a challenge, but our challenge is nothing in comparison to that of the people who must battle this disease on a daily basis. When we complete our triathlon on Sept. 9, you will be with us in spirit, as you will with all those who need your help and who will benefit from your generosity.

If you would like to make a tax-deductible contribution to help us achieve our goal, please make your check payable to the Leukemia & Lymphoma Society.

Please mail your contribution to U.S. Space Camp California, Attention: Tri Team, P.O. Box 6 MFA, Mountain View, CA 94035 by Aug. 21, 2001.

With heartfelt thanks,
Space Camp Tri Team

BY VALERIE BUNNELL

VPP STAR Tip

"VPP sites routinely experience fewer employee injuries, lower workers' compensation costs, improved productivity and improved employee moral."

U.S. Department of Labor, October 27, 1997

2001 Presidential Rank and NASA Honor awards given

The 2001 Presidential Rank and NASA Honor Awards ceremony for Ames was held on July 26 in the center's main auditorium.

Ames presented Presidential Rank and NASA Honor awards to the 26 employees who were selected for individual awards and to the managers of the seven groups, which were selected for the NASA Group Achievement award. The names of the honorees are listed below. For more information, you can visit the Ames Incentive Awards Program web site at: http://hr.arc.nasa.gov/Awards/awards.html

Outstanding Leadership Medal

Joseph T. Bielitzki
Clifford C. Imprescia
Earl B. LeMar
Sandra M. Olliges
Gregory K. Schmidt
Charles E. Wade

Exceptional Scientific Achievement Medal

Linda L. Jahnke
Azadeh Tabazadeh

Group Achievement Award

NASA Astrobiology Institute Central Team

Dash 8 Wind Tunnel Test Team Information Power Grid Group

Intelligent Neural Flight and Propulsion Control System Group

SAGE III Ozone Loss and Validation Experiment (SOLVE) Science Team

SHARP-B2 Flight Experiment Team

Ames X-33 Integrated Product Team

Presidential Rank of Meritorious Executive

Robert Rosen

Exceptional Engineering Achievement Medal

Mark D. Betzina

Exceptional Service Medal

James P. Connolly
Teresa M. Del Vecchio
Thomas A. Edwards
Philip R. Fluegemann
John E. Humbert
Chuck C. Jorgensen
Robert J. Navarro
Harry Partridge III
Solita R. Que

Exceptional Achievement Medal

Nancy G. Daunton
Robert E. Gisler
Robert W. Mah
Theresa Nogales-Liang
Peter Norvig
Joan S. Salute

Public Service Medal

Mary Williams
Alexis A. Flippen

photo by Dominic Hart

Accepting on behalf of the The Dash 8 Wind Tunnel Test Team, Information Power Grid group, Leigh Ann Tanner and Arsi Vaziri (center), receiving their award from Deputy Director Bill Berry (left) and Center Director Henry McDonald (right) at the NASA Honor Awards on July 26.

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field in Bldg. 126, across from the south end of Hangar One. Work nights are usually Friday nights, 7:30 p.m. to 9:30 p.m. Play time is Sundays, 2 p.m. to 4 p.m. Call John Donovan (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Bowling League, starts September 4. We bowl at the Palo Alto Bowl on Tuesday nights. We are looking for full-time bowlers to fill out our teams and substitute bowlers as well. There will be a pre-league meeting at Palo Alto Bowl on Tuesday, August 28 at 6 p.m. If you have questions about the league or wish to sign up, please contact Mike Liu at ext. 4-1132.

Ames Diabetics (AAD), 1st & 3rd Wednesdays, 12 noon to 1 p.m., at Ames Mega Bites, far corner of Sun room. Peer support group discusses news that affects diabetics, type I & II & experiences in treatment, control & help with coping with the disease. POC: Bob Mohlenhoff, ext. 4-2523/email at: bmohlenhoff@mail.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: http://accc.arc.nasa.gov), 12 noon to 2 p.m., N-269, Rm. 201. POC: Joan Walton, ext 4-2005.

Nat'l Association of Retired Federal Employees, (NARFE), S. J. Chapt. # 50, no meeting in Aug. POC: Mr. Earl Keener (408) 241-4459 or NARFE 1-800--627-3394.

Ames Federal Employees Union (AFEU) general meeting, Aug 15, noon to 1 p.m., Bldg. 19, Room 1042. Guests welcome. More information at http://www.afeu.org. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, Aug 16, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262. URL: http://hamradio.arc.nasa.gov

Native American Advisory Committee mtg, Aug 28, 12 noon to 1 p.m., Building 19, Rm 1096. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Mtg, Sep 5, 11 a.m., N-200, Comm. Rm. POC: Paul Chaplin at ext. 4-3262.

Environmental, Health and Safety Monthly Information Forum, Sep 6, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. POC: Julie Quanz at ext. 4-6810.

Safety and Quality Week Scheduled for September 24 thru 28 -- Safety Stand Down Day on Wednesday, Sept 26, includes Street Fair with Health and Safety Awareness Vendors, the Chili Cook-Off and a Centerwide Safety Competition (Jeopardy Format) at 2:00 p.m. in Main Aud. Speakers: Homer Hickam, Jr., author of "October Sky" on Monday at 10:00 a.m.; NASA Astronaut Dr. Yvonne Cagle Wednesday at 9:30 a.m. and Michael Pollan, author of "Botany of Desire" to speak on bio-diversity, genetic manipulation of crops and global warming Thursday at 9:30 a.m. Training classes offered all week long. POC jstanley@mail.arc.nasa.gov, ext. 4-4242.

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

3 bd/1.5 ba, 2-story twnhs on Luz Avenue, San José. Freshly painted inside, dishwasher, gas heat, w/w carpet, outside child play area/large patio. 1 car port. Easy access to H101/680/280. $285K. Azucena (408) 559-2881.

Looking for 3 bdrm house in Mtn. View/Los Altos area, w/yard/pool for family with two children. Rent-to-own or purchase. Can pay $1,600/mo. Have $10K as down payment. Foreclosure/assumable loan type of situation would be great as well. Contact: falcon7777@earthlink.net

Room for rent in house, San José (Willow Glen) 20 mins to Ames. Great neighborhood, short term rental or longer term avail. $695-725/mo depending on length of rental. Full access, fully furnished, W/D, D/W ,gardener, very clean. Room is currently being rented by an intern at Ames but will be available 8/15/01. E-mail any questions to t20brown@pacbell.net . Call (408) 265-9142 (H).

Room required. 21 year old masters student from Scotland working at Ames until December 14. N/S. E-mail Andy at: gringo_747@yahoo.co.uk or call (650) 369-2838.

3 bd/2 ba condo 1,486 sf, in Fremont. Ktchn and bthrms totally remdled; jczz tub, imprtd tile, Pergo flrs, dishwasher, microwave, frplc, cntrl a/c, security gt, wooded grounds w/pool, hot tub on common grounds. $285K. Call (510) 770-9933.

Two sunny, pleasant furnished bedrooms for rent in home in the Los Gatos/Campbell corner of San Jose for considerate, professional non-smoker. Off-street parking, safe family neighborhood, most utilities included. Long term preferred, shorter term possible for summer/fall. Shared bath/kitchen. Lease/deposits required. Call (408) 266-7272 and lv. message.

Room for rent in new house with new appliances, air conditioning & other amenities; non-smokers with no pets, clean, and quiet professionals welcome; $700/room; in San José close to all freeways; Call (408) 281-4765 or badrom2@yahoo.com

Miscellaneous

Credenza/hutch, 20in x 30in x 46in, beautiful honey-laquer finish, mint condition, only a year old, $400 (25% of original cost), must sell. Call (650) 473-0604.

Old fashioned free-standing wood headboard for king size bed; oval mirror/w/etching, shelves, carving. $100. Amana side-by-side frige; 23 SF, almond color, ice maker, great condt. $200. Call (510) 770-9933.

Cerwin Vega digital series D3 stereo speakers (two), very good condition, work perfect, great sound. Med. oak finish; 28" hi x 14" wide x 12" deep. $60 for the set. Kevin (408) 736-0838.

Ultrafit 100 EC exercise bike. "Capture Logic" allows personal programming. EEPROM memory. $200. Call (408) 723-7095 after 4:00 p.m.

Arm/leg excerciser. Adjustable settings for tension. Sears Model. $50. Call (408)723-7095 after 4:00 p.m.

Transportation

'70 VW convertible classic, original owner, no smog needed; transmission ok; needs work on top & possibly engine. $1,600. Esther or Art (650) 961-2732.

'85 Toyota Celica GT 5 spd, hatchback, A/C, sunroof, power, cruise, 148K mls. Very reliable, runs great. $1,200 or B/O. Call (650)-348-7544.

'86 Honda Accord LX, 146k mls, $1,500. Call (408) 734-5769.

'88 Merkur Scorpio 4 door. Rear seats fold down to provide "station wagon" space with rear hatch door. A fine running machine with 140K mis of dependable service. Transmission rebuilt at 130K mis. Cost $27,000. new, now reduced to $3,000. Mike (650) 604-4740.

'92 Chrysler LeBaron Convertible, shiny red, V6 engine, mechanically excellent, looks good, new top, 112K miles, uses no oil between changes, automatic, air conditioning, cruise control, fm stereo/cassette/CD, good brakes, struts, tires. Fun to drive. Very reliable. Asking 5K. Gus (831) 688-3349.

'95 Jaguar XJS convertible, mint condition, 21K miles, loaded, rare paint (rose-bronze), $30K. Call (925) 933-8706.

'96 Toyota 4 Runner, green metallic, 82K mls, $17,895. Luis (650) 207-6446.

Carpool

Looking for carpool from Hayward/Castro Valley area to Moffett Field; need to arrive 7:20 a.m. to 7:30 a.m., depart 4:00 p.m. (Monday through Friday). Call Ms. Triviso ext. 4-1728 or mtriviso@mail.arc.nasa.gov

Looking for carpool from La Honda area to Moffett Field. Arrival and departure times are flexible. Contact Carrie at 4-2560 or cgraham@globe.arc.nasa.gov

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: http://ccf.arc.nasa.gov/codejp/pages/lostFound.html to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Ames public radio

1700 KHz AM radio -- information announcements & emergency instructions, when appropriate, for Ames employees.

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit the web site at: http://exchange.arc.nasa.gov

Beyond Galileo N-235 (8 a.m. to 2 p.m.) ext. 4-6873

Ask about NASA customized gifts for special occasions. Check centerwide emails for special sales and events. Maker your reservations for Chase Park here.

Mega Bites (Ames Café) N-235 (6 a.m. to 2 p.m.) ext. 4-5969

Catering is available for your office B.B.Q. or luncheon. Come by for details. See daily menu at: http://exchange.arc.nasa.gov

Visitor Center Gift Shop N-223 (10 a.m. to 4:30 p.m.) ext. 4-5412

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc... (N-235, 8 a.m. to 2 p.m.) ext. 4-6873

Get your exclusive discount tickets for Air Expo Moffett Field 2001. Supplies are limited, so get yours early. Check our web site for all discounts to local attractions, http://exchange.arc.nasa.gov and click on tickets.

NASA Lodge (N-19) 603-7100

Open 7 days a week, 7:00 a.m. to 10 p.m. Rates from $40 - $50.

NASA Swim Center (N108) 603-8025

The pool is open for the summer. Book your office birthday party. A fun way to spend the day.

Vacation Opportunities

Lake Tahoe Squaw Valley twnhse, 3bd/2ba, balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating and more. Summer rates. Call 650) 968-4155, DBMcKellar@aol.com

South Lake Tahoe cottage with wood fireplace and hot tub. Rates from $50 to $130 per night. Call (650) 967-7659 or (650) 704-7732.

Vacation rental, Bass Lake CA 14 mls south of Yosemite. 3 bd/1.5 ba, TV, VCR, MW, fireplace, charcoal BBQ, priv. boat dock, great lake view. Sleeps 8. $1,050/wk. Call (559) 642-3600 or (650) 390-9668.

Big Sur vacation rental, secluded 4bd/2ba house in lovely canyon setting. Fully equipped kitchen. Access to priv. beach. Tub in patio garden. Hiking, biking and jogging. Halfway between Carmel & Big Sur. $175/night for 2, $225 for 4 & $250 for more, plus $150 cleaning dep. Call (650) 328-4427.

Ames Exchange hosts employee appreciation lunch

photos by Tom Trower

Submarine sandwiches, chips, cookies, sodas and water were the order of the day as the Ames Exchange treated about 2,000 employees and on-site personnel to a 'free lunch.' The celebration was designed to thank employees for their support of the Mega Bytes cafe and Beyond Galileo Gift Shop and to encourage participation in Exchange-sponsored recreation and morale and welfare programs.

NASA Ames EXCHANGE

THE AMES Astrogram

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035-1000

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